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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,747	04/09/2004	Je-hyoung Ryu	1572.1241	8808

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EXAMINER

NGHIEM, MICHAEL P

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/820,747

Applicant(s)

RYU ET AL.

Examiner

Michael P. Nghiem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 11, 13, 14 and 16-18 is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 8-10, 12 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The Communication filed on May 01, 2006 has been acknowledged.

Terminal Disclaimer

The terminal disclaimer filed on April 27, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 10/820,748 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 8, 10, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 2005/0012498) in view of Fukuyama et al. (JP 2003-253224).

Regarding claim 1, Lee et al. discloses an inspecting apparatus (Fig. 1) for a semiconductor device (paragraph 0024, line 2) comprising:

- a match plate (357);
- a contact module (355) combined with the match plate (paragraph 0076, lines 5-7), the contact module comprising:
 - a radiator (403) to contact the semiconductor device (paragraph 0082, lines 4-5), and a tester (comprises 300) to contact leads (361) of the semiconductor device (paragraph 0070, lines 1-3), and a thermally conductive pad (conductor, paragraph 0018, line 13) installed on a contacting face of the radiator, to transfer heat from the semiconductor device to the radiator (paragraph 0018, lines 12-19),

Regarding claim 3, Lee et al. discloses that the thermally conductive pad is compressible (conductor is deemed to be compressible).

Regarding claim 4, Lee et al. discloses that the thermally conductive pad is compressible from 1-2 mm (if an adequate force is applied to the conductor).

Regarding claim 10, Lee et al. discloses that the radiator comprises:

- a heat sink (403);
- a contact pusher (350) to contact the semiconductor device having the thermally conductive pad attached to a contacting face (paragraph 0076, lines 1-3);

- a heat flat pusher (351) combined with the contact pusher and the heat sink to transfer heat from the semiconductor device to the heat sink via the contact pusher (Fig. 12).

Regarding claim 12, Lee et al. discloses a second elastic member (358) installed between the match plate and the contact block, to allow the contact block to move up and down elastically corresponding to ascent and descent of the match plate, thereby pressing the lead pusher against the leads of the semiconductor device (Fig. 13).

Regarding claim 15, Lee et al. discloses that the second elastic member is a spring (Fig. 13).

However, Lee et al. does not disclose the following:

- regarding claim 1, the thermally conductive pad is installed on the radiator using a thermally conductive double-sided adhesive member.
- regarding claim 8 (and 9), the thermally conductive double-sided adhesive member comprises an acrylic polymer.

Nevertheless, Fukuyama et al. discloses a thermally conductive double-sided adhesive tape (tape is deemed to be thermally conductive) comprising an acrylic polymer (Solution) for the purpose of strongly fixing materials (Problem To Be Solved).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Lee et al. with a thermally conductive double-

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sided adhesive tape as disclosed by Fukuyama et al. et al. for the purpose of strongly fixing materials.

Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Fukuyama et al. as applied to claim 1 above, and further in view of Hirotsuru et al. (US 6,447,894).

Lee et al. as modified discloses all the claimed limitations as discussed above except the thermally conductive pad comprises a ceramic-silicon composite (claim 5).

Nevertheless, Hirotsuru et al. discloses that a ceramic-silicon composite (column 1, lines 1-2) for the purpose of having excellent thermal conductive characteristic and light weight (column 1, lines 2-4).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Lee et al. as modified with a ceramic-silicon composite as disclosed by Hirotsuru et al. for the purpose of having excellent thermal conductive characteristic and light weight.

Allowable Subject Matter

Claims 2, 11, 13, 14, and 16-18 are allowed.

Reasons For Allowance

The **combination** as claimed wherein the inspecting apparatus for the semiconductor device comprising a plurality of contact modules, wherein the match plate is formed with a plurality of combining holes combinable with the plurality of contact modules (claims 2, 18) or a first elastic member installed on the circumference of the heat flat pusher to elastically connect the contact block and the lead pusher (claim 11) or the compressible thermally conductive pad conforms to irregularities of the semiconductor device, preventing air from being present between the thermally conductive pad and the semiconductor device when the thermally conductive pad and the semiconductor device are in contact (claim 17) is not disclosed, suggested, or made obvious by the prior art of record.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (571) 272-

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2277. The examiner can normally be reached on M-H.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL NGHIEM
PRIMARY EXAMINER

Michael Nghiem

July 17, 2006